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CORRESPONDENCE
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NOTE

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BY DATE

MK 10/25

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

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Ref: 8HWM-FF

Mr. Richard Schassburger
Department of Energy
Rocky Flats Office
P.O. Box 928
Golden, CO 80402-0928

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re: OU 6 Tech Memo #2

Dear Mr. Schassburger.

EPA has reviewed your July 7, 1993, Technical Memorandum 2 submittal for OU 6 (Walnut Creek Drainage). Our comments on this submittal are attached. As lead regulatory agency for OU 6, EPA will make the approval determination for the subject document. EPA comments must be addressed in the final TM 2 submittal. Comments submitted under separate cover by CDH must be addressed to the satisfaction of EPA. We will be working with your staff to resolve any outstanding comments and avoid any additional submittals prior to the final.

We apologize for the delay in review of this document. We will cooperate in expediting finalization of TM 2 and in other steps necessary to recover lost time and avoid possible problems with delivery of the Remedial Investigation Report as scheduled.

If you have questions or would like to discuss the progress of this effort, please contact Bill Fraser (EPA) at 294-1081.

Sincerely,

Martin Hestmark, EPA
Manager
Rocky Flats Project

cc: Joe Schieffelin, CDH
Harlen Ainscough, CDH
Norma Castaneda, DOE

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

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EPA Comments - OU 6 Technical Memorandum #2 - Exposure Scenarios

1.0 GENERAL COMMENTS

1. The intent of Technical Memorandum No. 2 is to identify and describe potential reasonable maximum exposure scenarios for present and future human receptors in OU 6 and to identify reasonable maximum intake parameters which will be used to estimate chemical intake. Although the memorandum comprehensively identifies exposure scenarios, the intake parameters presented in some of the scenarios fall short of reasonable maximum values conventionally used for Superfund sites. The parameters should be revised to reflect a more conservative approach which will provide consistency with other RFP operable units and Superfund sites.

2.0 SPECIFIC COMMENTS

1 Page 3-12, Second and Third Paragraphs The text explains in great detail the health and safety programs in place at RFP to protect workers from exposure to chemicals of concern (COCs). OU 6 COCs have not been identified. These paragraphs and other references to the health and safety plans at RFP are not relevant here and should be removed.

2. Page 4-6, Last Bullet. The text states that exposure pathways related to groundwater will not be evaluated for any receptors. Groundwater exposure pathways must be evaluated for future onsite receptors. Although groundwater is currently not used on the site, it may be used as a drinking water source in the future. Arguments presented that available quantity will not support certain withdrawal rates are neither germane nor convincing. Thus, we require that domestic use of onsite groundwater be included in the onsite residential scenario.

3. Page 4-12, First Paragraph. The statement that inhalation of airborne particulates by future construction workers is likely to be relatively insignificant because of limited duration of exposure is not correct or justified. It is possible that a future construction worker may be on-site for 8 to 10 hours per day. Additionally, inhalation rates are higher for construction workers than other occupational exposures. This statement should be modified as such.

4. Page 5-3, Section 5.1.1, Fourth Paragraph The exposure duration, time and frequency for all exposure pathways for the future ecological researcher is incorrect. The exposure duration for the future on-site ecological researcher should be 25 years, the exposure frequency should be 250 days/year, and the exposure time should be 8 hours per day.

5 Page 5-5, Section 5 1 3, First Indented Paragraph The soil ingestion rate for an occupational construction worker should be 480 milligrams per day (mg/day) (EPA 1993); the value listed in the text is 50 mg/day which is sufficient for an office worker; however, for a construction worker the higher value should be used. The higher value should be used because it is more health-protective than 50 mg/day, and represents the RME value for soil ingestion by a construction worker in this exposure scenario. The text and corresponding tables should be corrected.

6. Page 5-6, First Indented Paragraph The text proposes the use of a "fraction contaminated" factor to modify soil exposure pathways The fraction-contaminated factor is based on the amount of time that a receptor would spend in the OU 6 portion of the buffer zone each day. The use of this fraction is inappropriate and could underestimate contaminant intake from soil exposure pathways It should be eliminated from the intake algorithm. The accompanying tables should be corrected.

7. Page 5-6, Second Indented Paragraph. The use of a matrix factor to account for soil bioavailability of ingested contaminants is inappropriate. Chemicals in soil may not be covalently bound to particulates and should be assumed to be available for intestinal absorption until proven otherwise. The matrix factor should be deleted from the equation unless site-specific information becomes available.

8. Page 5-7, Fifth Indented Paragraph. The text states that a 90 percent reduction in chemical concentration on the food surface due to washing of produce will be assumed. This assumption cannot be verified and is, therefore, inappropriate for this route of exposure. This factor should be removed from the equation.

9. Page 5-8, Section 5.1.6, Second Indented Paragraph. The text states that an exposed body surface area of 2,910 cm^2/day will be used to evaluate dermal contact with soil for all receptors. This value is stated to be representative of face, forearms, and hands. The RME value for face, arms, and hands as listed in the Exposure Factors Handbook (EPA 1989b) is 5,300 cm^2/event and the value for an average case is 2,000 cm^2/event. The surface area value of 5,300 cm^2/event should be used in exposure calculations as an upper bound value. The text and corresponding tables should be corrected.

10. Page 5-10, First Indented Paragraph. The text states that the body surface area for future residential receptors is 4,850 cm^2/day. This value is incorrect. EPA (1989b) recommends a total body surface area value of 19,400 cm^2/event for dermal exposure to surface water. The text and corresponding tables

should be corrected using a surface area value of 19,400 cm^2/ event for this exposure pathway.

3.0 REFERENCES

U.S. Environmental Protection Agency (EPA). 1989a. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A). Interim Final. U.S Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C. EPA/540/1-89/002.

EPA, 1989b. Exposure Factors Handbook. U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-89/043.

EPA 1991. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. OSWER Directive 9285.6-03.